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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,557	02/19/2004	Maged E. Beshai	92644-22	1710

22463 7590 03/17/2008

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EXAMINER	
LEE, ANDREW CHUNG CHEUNG	
ART UNIT	PAPER NUMBER
2619	
MAIL DATE	DELIVERY MODE
03/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,557	BESHAI, MAGED E.	
	Examiner	Art Unit	
	ANDREW C. LEE	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23,29-31 and 37-40* is/are rejected.

7)☒ Claim(s) *24-28, 32-36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/15/2006 , 4/23/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is response to the Application 10780557 filed on 2/19/2004.

Claims 1 – 40 are hence entered and presented for examination.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 3/15/2006 was filed, and the submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claims 5, 17 are objected to because of the following informalities:

Regarding claim 5, the phrase "adapted to", in line 2, is not a positive recitation.

Regarding claim 17, the phrase "adapted to", in line 2, is not a positive recitation

According to Interim Guidelines for Examination of Patent Application for Patent Subject Matter Eligibility, pages 6 – 7, the grammar and intended meaning of terms used in a claim will dictate whether the language limits the claim scope. Language that suggests or makes optional but does not require steps to be performed or does not limit

a claim to a particular structure does not limit the scope of a claim or claim limitation. Hence the phrase "adapted to" is the language that may raise a question as to the limitation effect of the language in a claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 29, 2 – 23, 30, 31, 37, 38, 39, 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeffrey et al. (5544168).

Regarding claims 1, 12, 29, Jeffrey et al. disclose a circulating switch (Fig. 8, Fig. 10b) comprising: a plurality of switch modules ("elements 1 …16, central switches" is interpreted as a plurality of switch modules; Fig. 10b, col. 12, lines 33 – 45); and a temporal cyclical rotator having a plurality of inlets and a plurality of outlets, where each inlet of said plurality of inlets is communicatively connected to each switch module of said plurality of switch modules and each outlet of said plurality of outlets is communicatively connected to said each switch module of said plurality of switch modules and where said temporal cyclical rotator is operable to cyclically connect each switch module of said plurality of switch modules to each other switch module of said

plurality of switch modules by cyclically connecting individual inlets among said plurality of inlets to individual outlets among said plurality of outlets (col. 2, lines 43 – 53; Fig. 10b, col. 12, lines 33 – 45).

Regarding claims 2, 23, Jeffrey et al. disclose the circulating switch claimed wherein said each switch module of said plurality of switch modules is a common memory switch module ("central control memory manager"; Fig. 16, col. 19, lines 40 – 55).

Regarding claim 3, Jeffrey et al. disclose the circulating switch claimed wherein said single temporal cyclical rotator is an electronic rotator ("ASIC" is interpreted as single temporal cyclical rotator is an electronic rotator; col. 18, lines 62 – 67, col. 19, lines 1 – 21).

Regarding claim 4, Jeffrey et al. disclose the circulating switch claimed wherein said single temporal cyclical rotator is a photonic rotator ("bi-directional photonic rotator" in interpreted as single temporal cyclical rotator is a photonic rotator; col. 26, lines 3 – 8).

Regarding claim 5, Jeffrey et al. disclose the circulating switch claimed wherein: said temporal cyclic rotator is adapted to connect said each switch module of said plurality of switch modules to said each other switch module during a rotation cycle comprising a plurality of rotation phases (col. 20, lines 15 – 20); and during a given rotation phase among said plurality of rotation phases, wherein said each switch module is connected through said temporal cyclic rotator to a respective switch module determined according to a predefined rotation configuration (col. 20, lines 22 – 41), said

each switch module is operable to: receive at most one data segment from a subtending data source; transmit at most one data segment to a subtending data source; and transmit at most two data segment to said respective switch module (col. 20, lines 52 – 67, col. 21, lines 1 – 12, Fig. 17).

Regarding claim 6, Jeffrey et al. disclose the circulating switch claimed wherein said each switch module is further operable to transmit a given data segment to said respective switch module, where said given data segment is destined to switch module distinct from said respective switch module (col. 20, lines 52 – 65).

Regarding claim 7, Jeffrey et al. disclose the circulating switch claimed wherein said each switch module is further operable to: receive indicative data segments from another switch module among said plurality of switch modules, each of said indicative data segments including an indication of a sequential order; and reorder said indicative data segments according to said indication (col. 20, lines 56 – 67, col. 21, lines 1 – 8).

Regarding claim 8, Jeffrey et al. disclose the circulating switch claimed further comprising: a plurality of module controllers, each module controller of said plurality of module controllers associated with a switch module of said plurality of switch modules; a master controller communicatively connected to said each module controller of said plurality of module controllers, where said master controller is operable to indicate to said plurality of module controllers a schedule according to which each switch module of said plurality of switch modules cyclically connects to each other switch module of said plurality of switch modules (control element in input port" is interpreted as one of a plurality of module controller; and "control element in central elements" is interpreted as

a master controller; Fig. 2, Fig. 8, col. 9, lines 57 - 67, col. 10, lines 1 - 6).

Regarding claim 9, Jeffrey et al. disclose the circulating switch claimed wherein said master controller is directly connected to said each module controller of said plurality of module controllers (Fig. 2, Fig. 8, col. 9, lines 57 - 67, col. 10, lines 1 – 6).

Regarding claim 10, Jeffrey et al. disclose the circulating switch claimed wherein said master controller subtends to one of said switch modules and receives control signals through said one of said switch modules (col. 13, lines 10 – 16, Fig. 12).

Regarding claim 11, Jeffrey et al. disclose the circulating switch claimed wherein said master controller connects to said temporal cyclic rotator and receives control signals through said temporal cyclic rotator (col. 13, lines 10 – 25).

Regarding claim 13, Jeffrey et al. disclose the circulating switch claimed further comprising: a plurality of module controllers, where each module controller of said plurality of module controllers is associated with a corresponding switch module of said plurality of switch modules; and a master controller communicatively coupled to said each module controller ("control element in input port" is interpreted as one of a plurality of module controller; and "control element in central elements" is interpreted as a master controller; Fig. 2, Fig. 8, col. 9, lines 57 - 67, col. 10, lines 1 – 6).

Regarding claim 14, Jeffrey et al. disclose the circulating switch claimed wherein said each temporal cyclical rotator of said array has a predetermined number of input ports and a predetermined number of output ports and wherein each input port of said number of input ports connects to each of said output ports according to a predetermined connectivity matrix defined for a given rotation cycle (Fig. 8, col. 9, lines

57 - 67, col. 10, lines 1 – 6).

Regarding claim 15, Jeffrey et al. disclose the circulating switch claimed wherein said rotation cycle comprises a number of rotation phases of equal duration and wherein during each of said rotation phases said each input port connects to a respective output port of said number of output ports determined according to rotation connectivity specific to said each temporal cyclic rotator (Fig. 8, col. 9, lines 57 - 67, col. 10, lines 1 – 6).

Regarding claim 16, Jeffrey et al. disclose the circulating switch claimed wherein said each switch module of said plurality of switch modules is operable to: receive a succession of data segments; receive a schedule; and transmit said data segments according to said schedule (col. 10, lines 9 – 31).

Regarding claim 17, Jeffrey et al. disclose the circulating switch claimed wherein: each switch module of said plurality of switch modules is adapted to organize data received from data sources into data segments; and said each module controller associated with said corresponding switch module is operable to communicate identifiers of said data segments to said master controller (col. 10, lines 19 – 37).

Regarding claim 18, Jeffrey et al. disclose the circulating switch claimed wherein said each module controller associated with said corresponding switch module is further operable to: send requests to said master controller for scheduling said data segments; receive a schedule from said master controller for transmitting said data segments; and cause corresponding switch module to transmit said data segments according to said schedule (col. 20, lines 22 – 27).

Regarding claim 19, Jeffrey et al. disclose the circulating switch claimed wherein said each master controller is operable to: receive from at least one module controller requests for scheduling said data segments; determine a schedule for transmitting said data segments (col. 20, lines 22 – 27); and communicate said schedule to each of said at least one module controller (col. 20, lines 42 – 46).

Regarding claim 20, Jeffrey et al. disclose the circulating switch claimed wherein said each master controller is operable to: receive a flow-rate-allocation request from a given switch module among said plurality of switch modules (col. 21, lines 19 – 31); allocate a permissible transfer rate in response to said flow-rate-allocation request (col. 21, lines 27 – 32); communicate said permissible transfer rate to said given switch module; determine a data transfer schedule specific to a source switch module and a destination switch module among said plurality of switch modules (col. 21, lines 33 – 54); and communicate said data transfer schedule to said source switch module and said destination switch module (col. 22, lines 33 – 47).

Regarding claim 21, Jeffrey et al. disclose the circulating switch claimed wherein each switch module of said plurality of switch modules comprises one ingress module and one egress module ("to switch each input port to any output port" is interpreted as one ingress module and one egress module; col. 2, lines 46 – 47) .

Regarding claim 22, Jeffrey et al. disclose the circulating switch claimed wherein at least one temporal cyclical rotator of said plurality of temporal cyclical rotators is programmable for change of cyclic input-output connectivity ("to be programmable"; col. 8, lines 5 – 14; col. 20, lines 3 – 5).

Regarding claim 30, Jeffrey et al. disclose the method claimed wherein said connecting occurs during at most a specified number of time slots in a time frame having a predefined number of time slots (col. 9, lines 62 – 67) and said method further comprises: receiving data segments at said each switch module, each of said data segments destined to a specified switch module in said plurality of switch modules; and sending, from said each switch module to said specified switch module, a number of said data segments such that said number of said data segments does not exceed said specified number of time slots during said time frame (col. 6, lines 27 – 38).

Regarding claim 31, Jeffrey et al. disclose the method claimed wherein, during each of said time slots, said each switch module connects to a subset of said switch modules, said subset comprising a number of switch modules not exceeding said specified number of time slots (col. 9, lines 62 – 67).

Regarding **claim 39**, Jeffrey et al. disclose a method of adding a new switch module to a circulating switch having a plurality of switch modules that exchange data segments through an array of temporal cyclical rotators (col. 2, lines 42 – 53, , the method comprising: scheduling an exchange of said data segments through said temporal cyclical rotators while excluding from consideration a selected one of said temporal cyclical rotators (col. 2, lines 57 – 67, col. 3, lines 1 – 8); extending a rotation configuration of a selected one of said temporal cyclical rotators of said array (col. 3, lines 16 – 19, col. 12, lines 34 – 60); connecting an input port and an output port of said new switch module to said selected one of said temporal cyclical rotators; and repeating said scheduling, extending and connecting using another selected one of said temporal

cyclical rotators (col. 4, lines 36 – 55).

Regarding claim 40, Jeffrey et al. disclose the method claimed including a further step of exchanging data segments through said selected one of said temporal cyclical rotators following said connecting (col. 10, lines 1 – 19).

Allowable Subject Matter

6. Claims 24 – 28, 32 – 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art made of record, in single or in combination, fails to disclose "each common memory switch of said plurality of switch modules has a data memory logically divided into: a first section for storing a first set of data segments, where said first set of data segments are received from data sources; a second section for storing a second set of data segments, where said second set of data segments are destined for particular switch modules among said plurality of switch modules, said second section logically divided into a number of sub-sections, each sub-section of said number of sub-sections corresponding to one temporal cyclical rotator among said plurality of said temporal cyclical rotators; and a third section for storing data segments directly destined for data sinks" as claimed in claim 24;

"wherein, at a given switch module of said plurality of switch modules, said receiving further comprises: writing a first data segment, received from a data source

subtending to said given switch module, in a shipping section of a memory device associated with said given switch module; writing a second data segment, received from one of said switch modules, in a transit section in said memory device; and writing a third data segment, received from another of said switch modules, in a receiving section in said memory device" as claimed in claim 32.

7. Additionally, all of further limitations in claims 25 – 28, 33 – 36 are allowable since the claims are dependent upon the claims 24, and 32, respectively.

8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Jeffrey et al. (5459724) disclose ATM switching arrangement.

b) Servel et al. (4884264) disclose hybrid time multiplex switching system with optimized buffer memory.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW C. LEE whose telephone number is (571)272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C Lee/
Examiner, Art Unit 2619
3/16/2008

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619